



Additional file 4. Electrophysiological recording of postsynaptic currents from wild-type and *Fak56*<sup>N30/K24</sup> in 1 mM [Ca<sup>2+</sup>]. Muscle 6 of segment A3 in late 3<sup>rd</sup> instar larvae was recorded. (A) Cumulative frequency plot reveals a significant shift in the distribution of mEJP amplitudes. Note that the skewness of cumulative frequency plot decreased in *Fak56*<sup>N30/K24</sup> ( $1.6 \pm 0.1$ ) as compared to wild-type ( $2.3 \pm 0.3$ ,  $0.01 < p < 0.025$  by Kruskal-Wallis *h* test). There was no statistically significant changes between wild-type and *Fak56* mutant in the frequency of mEJPs ( $0.98 \pm 0.11$  vs.  $1.20 \pm 0.08$ ,  $p = 0.1159$  by Student *t* test), in the variance/mean of mEJPs ( $0.28 \pm 0.06$  vs.  $0.31 \pm 0.03$ ,  $0.01 < p < 0.025$  by Kruskal-Wallis *h* test) and in the membrane resting potential ( $-72.2 \pm 1.4$  mV vs.  $-75.4 \pm 1.0$  mV,  $p = 0.076$  by Student *t* test). (B) Representative traces and mean amplitude of EJPs in wild-type and *Fak56*<sup>N30/K24</sup>. Note that a significant increase of the mean EJP amplitude was detected in *Fak56*<sup>N30/K24</sup> as compared to wild-type ( $p < 0.0001$  by Student *t* test). Calibration: 30 ms, 10 mV for evoked release.